CLAIMS

What is claimed is:

1.   A method of adjusting image lighting on a preparatory image, comprising:

5   generating preparatory light for a predetermined preparatory duration;

brightness of image (total image)

determining an average preparatory image luminance of the preparatory image represented by preparatory image data based on the preparatory image data and

area of interest

weighting at least a subset of the preparatory image data; and

brightness of image

generating a supplemental strobe duration based on the average preparatory

(total image)   *area of interest*

10   image luminance and luminance weightings.

2.   The method of claim 1 wherein the generating the supplemental strobe duration further comprises:

generating average block luminances for subsets of preparatory image data;

15   applying the luminance weightings to at least a subset of the average block luminances to generate weighted average block luminance; and

determining the average image luminance based on the weighted average block luminance.

20   3.   The method of claim 2 wherein the luminance weightings are stored in a weighting table, and the applying further comprises:

accessing the weighting table to retrieve respective luminance weightings corresponding to portions of the preparatory image; and

multiplying the average block luminance by the respective luminance weightings to provide the average weighted block luminance.

4. The method of claim 1, further comprising:

5   generating a look-up table storing associated image strobe durations and power values including a preparatory image strobe duration and associated preparatory power value;

generating an adjustment factor by dividing a predetermined target luminance by the average image luminance;

10   multiplying the preparatory luminance power value by the adjustment factor to generate a target luminance power value; and

identifying, in the look-up table, an identified strobe duration corresponding to the target luminance power value, the identified strobe duration being the supplemental strobe duration.

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5. The method of claim 1, wherein generating the supplemental strobe duration further comprises:

generating a look-up table storing associated image strobe durations and luminance power values including a preparatory image strobe duration and a

20   preparatory power value;

generating a light adjustment factor by dividing a predetermined target luminance by the average image luminance;

multiplying the preparatory power value by the light adjustment factor to generate a target look-up table power value;

identifying, from the look-up table, first and second look-up table power

values that are greater and less than, respectively, the target look-up table power

value, the first and second look-up table power values having associated first and

second image strobe durations; and

5   generating a final image strobe duration by interpolating the first and second

image strobe durations in accordance with the target look-up table power value.

6.   The method of claim 1 further comprising:

generating a look-up table storing associated image strobe durations and

10   luminance power values including a preparatory image strobe duration and a

preparatory power value; and

accessing the look-up table based on the average image luminance.

7.   A signal bearing media having machine readable instructions for

15   adjusting image lighting on a preparatory image, comprising:

a first set of machine readable instructions for acquiring a preparatory image;

a second set of machine readable instructions for determining an average

preparatory image luminance based on preparatory image data associated with the

preparatory image and weighting at least a subset of the preparatory image data; and

20   a third set of machine readable instructions for generating a supplemental

strobe duration based on the average preparatory image luminance and luminance

weightings.

8.   The signal bearing media of claim 7, wherein the machine readable instructions that generate the supplemental strobe duration further include:

a fourth set of machine readable instructions for generating average block luminances for subsets of the preparatory image data;

5   a fifth set of machine readable instructions applying the luminance weightings to at least a subset of the average block luminances to generate weighted average block luminance; and

a sixth set of machine readable instructions for determining the average image luminance based on the weighted average block luminance.

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9.   The signal bearing media of claim 8, further comprising:

a seventh set of machine readable instructions for storing the luminance weightings in a weighting table;

a eighth set of machine readable instructions for accessing the weighting table

15   to retrieve respective luminance weightings corresponding to portions of the preparatory image; and

a ninth set of machine readable instructions for multiplying the average block luminance by the respective luminance weightings to provide the average weighted block luminance.

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10.   The signal bearing media of claim 7, further comprising machine readable instructions that include:

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a tenth set of machine readable instructions for generating a look-up table that stores associated image strobe durations and power values including a preparatory image strobe duration and an associated preparatory power value;

an eleventh set of machine readable instructions for multiplying the preparatory luminance power value by the adjustment factor to generate a target luminance power value; and

a twelfth set of machine readable instructions for identifying, in the look-up table, an identified strobe duration corresponding to the target luminance power value, the identified strobe duration being the supplemental strobe duration.

11.   The signal bearing media of claim 7, further comprising:

a thirteenth set of machine readable instructions for generating a look-up table that stores associated image strobe durations and luminance power values including a preparatory image strobe duration and a preparatory power value;

a fourteenth set of machine readable instructions for generating a light adjustment factor by dividing a predetermined target luminance by the average image luminance;

a fifteenth set of machine readable instructions for multiplying the preparatory power value by the light adjustment factor to generate a target look-up table power value;

a sixteenth set of machine readable instructions for identifying, from the look-up table, first and second look-up power values that are greater and less than, respectively, the target look-up table power value, the first and second look-up table power values having associated first and second image strobe durations; and

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a seventeenth set of machine readable instructions for generating a final image

strobe duration by interpolating the first and second image strobe durations in

accordance with the target look-up table power value.

5   12.   The signal bearing media of claim 7, further comprising a eighteenth

set of machine readable instructions for generating a look-up table that store

associated image strobe durations and luminance power values including a

preparatory image strobe duration and a preparatory power value, wherein the

instructions that determine the supplemental strobe duration access the look-up table

10   based on the average image luminance and at least one luminance power value is used

to generate the supplemental strobe duration.

13.   The signal bearing media of claim 12, wherein the eighteenth set of

machine readable instructions for generating the look-up table, include:

15   a nineteenth set of machine readable instructions for capturing a set of

calibration images, each calibration image being associated with a predetermined

calibration strobe duration, one calibration strobe duration being substantially equal to

the preparatory image strobe duration; and

a twentieth set of machine readable instructions for generating power values

20   corresponding to each calibration image with respect to a luminance value associated

with the predetermined preparatory duration.

14.   A digital imaging system comprising:

a processor electrically connected to a strobe;

an image sensor coupled to a memory, where a supplemental strobe duration

stored in the memory is generated from a preparatory image data received at the

5   processor from the image sensor when the strobe is activated to generate preparatory

light for a predetermined preparatory duration.

15.   The digital image system of claim 14, wherein the processor divides

the preparatory image data into subsets and generates average block luminances for

10   each subset and applies the luminance weightings to at least a subset of the average

block luminances, resulting in weighted average block luminance used to derive the

weighted average block luminance.

16.   The digital image system of claim 14, wherein the memory has a

15   weighting table that stores the luminance weighting.

17.   The digital image system of claim 14, wherein the processor access a

look-up table in the memory that stores image strobe durations and power values

including a preparatory image strobe duration and an associated preparatory power

20   value to generate an adjustment factor by dividing a predetermined target luminance

by the average image luminance power value and then multiplying the adjustment

factor by the preparatory luminance power value to derive the target luminance power

value that corresponds to an identified strobe duration in the look-up table.